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Sequence Listing was accepted.

If you need help call the Patent Electronic Business Center at (866) 217-9197 (toll free).

Reviewer: Anne Corrigan

Timestamp: [year=2009; month=11; day=10; hr=12; min=20; sec=48; ms=188;  
]

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Application No: 10590551 Version No: 4.0

**Input Set:**

**Output Set:**

**Started:** 2009-10-28 19:25:41.866  
**Finished:** 2009-10-28 19:25:43.740  
**Elapsed:** 0 hr(s) 0 min(s) 1 sec(s) 874 ms  
**Total Warnings:** 15  
**Total Errors:** 0  
**No. of SeqIDs Defined:** 26  
**Actual SeqID Count:** 26

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W 213	Artificial or Unknown found in <213> in SEQ ID (2)
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SEQUENCE LISTING

<110> Genomine, Inc.

POSTECH FOUNDATION

<120> Novel Phytochrome-interacting protein and a use thereof

<130> OP05-1002

<140> 10590551

<141> 2009-10-28

<150> KR10-2004-0013663

<151> 2004-02-27

<160> 26

<170> KopatentIn 1.71

<210> 1

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 1

ggatccaaat gtcaggctct aggccgact

29

<210> 2

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 2

ctcgagctac ttgttgctg cagcgagttc

30

<210> 3

<211> 1455

<212> DNA

<213> Arabidopsis thaliana

<400> 3

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aacgaagctt ttaaaggta caaatactcc agtgctattg atctatatac aaaagctatt

120

gaactcaaca gcaacaacgc tggatattgg gcaaatcggt catttgctca cacaactg

180

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tctaaggcattacaggcg tggtgctgcg tatcttgcca tggaaaatt taaggatgcc 300  
ttgaaggact tccaacaggt aaaaaggctt tctcctaattg accctgatgc cacaagaaag 360  
ctaaaggaat gtgagaaagc agtgatgaaa ctcaaatttg aagaagcaat ctctgtgcca 420  
gtatctgaaa ggcgttcagt agctgagtcattgacttcc atacaataga ggttgagcca 480  
caatattctg gtgctagaat tgagggagag gaagttacct tagattttgt gaaaacgatg 540  
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cagactaggc aaatcttgcgtcagcactgcct tctcttgcgtatataagtgt tccacatggc 660  
aaacataatca ctgtttgcgg tgacgttcat ggtcagttct acgtatcttcaatatcttt 720  
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<212>	PRT
<213>	Arabidopsis thaliana

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 30 35 30

Ile Asp Leu Tyr Thr Lys Ala Ile Glu Leu Asn Ser Asn Asn Ala Val  
35 40 45

Tyr Trp Ala Asn Arg Ala Phe Ala His Thr Lys Leu Glu Glu Tyr Gly  
50 55 60

Ser Ala Ile Gln Asp Ala Ser Lys Ala Ile Glu Val Asp Ser Arg Tyr  
65 70 75 80

Ser Lys Gly Tyr Tyr Arg Arg Gly Ala Ala Tyr Leu Ala Met Gly Lys  
85 90 95

Phe Lys Asp Ala Leu Lys Asp Phe Gln Gln Val Lys Arg Leu Ser Pro  
100 105 110

Asn Asp Pro Asp Ala Thr Arg Lys Leu Lys Glu Cys Glu Lys Ala Val  
115 120 125

Met Lys Leu Lys Phe Glu Glu Ala Ile Ser Val Pro Val Ser Glu Arg  
130 135 140

Arg Ser Val Ala Glu Ser Ile Asp Phe His Thr Ile Glu Val Glu Pro  
145 150 155 160

Gln Tyr Ser Gly Ala Arg Ile Glu Gly Glu Glu Val Thr Leu Asp Phe  
165 170 175

Val Lys Thr Met Met Glu Asp Phe Lys Asn Gln Lys Thr Leu His Lys  
180 185 190

Arg Tyr Ala Tyr Gln Ile Val Leu Gln Thr Arg Gln Ile Leu Leu Ala  
195 200 205

Leu Pro Ser Leu Val Asp Ile Ser Val Pro His Gly Lys His Ile Thr  
210 215 220

Val Cys Gly Asp Val His Gly Gln Phe Tyr Asp Leu Leu Asn Ile Phe  
225 230 235 240

Glu Leu Asn Gly Leu Pro Ser Glu Glu Asn Pro Tyr Leu Phe Asn Gly  
245 250 255

Asp Phe Val Asp Arg Gly Ser Phe Ser Val Glu Ile Ile Leu Thr Leu  
260 265 270

Phe Ala Phe Lys Cys Met Cys Pro Ser Ser Ile Tyr Leu Ala Arg Gly  
275 280 285

Asn His Glu Ser Lys Ser Met Asn Lys Ile Tyr Gly Phe Glu Gly Glu  
290 295 300

Val Arg Ser Lys Leu Ser Glu Lys Phe Val Asp Leu Phe Ala Glu Val  
305 310 315 320

Phe Cys Tyr Leu Pro Leu Ala His Val Ile Asn Gly Lys Val Phe Val  
325 330 335

Val His Gly Gly Leu Phe Ser Val Asp Gly Val Lys Leu Ser Asp Ile  
340 345 350

Arg Ala Ile Asp Arg Phe Cys Glu Pro Pro Glu Glu Gly Leu Met Cys  
355 360 365

Glu Leu Leu Trp Ser Asp Pro Gln Pro Leu Pro Gly Arg Gly Pro Ser  
370 375 380

Lys Arg Gly Val Gly Leu Ser Phe Gly Gly Asp Val Thr Lys Arg Phe  
385 390 395 400

Leu Gln Asp Asn Asn Leu Asp Leu Leu Val Arg Ser His Glu Val Lys  
405 410 415

Asp Glu Gly Tyr Glu Val Glu His Asp Gly Lys Leu Ile Thr Val Phe  
420 425 430

Ser Ala Pro Asn Tyr Cys Asp Gln Met Gly Asn Lys Gly Ala Phe Ile  
435 440 445

Arg Phe Glu Ala Pro Asp Met Lys Pro Asn Ile Val Thr Phe Ser Ala  
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Val Pro His Pro Asp Val Lys Pro Met Ala Tyr Ala Asn Asn Phe Leu  
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Arg Met Phe Asn

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<220>  
<223> PCR primer

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<210> 6  
<211> 24  
<212> DNA  
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<400> 6  
ctcgagttag ttgaacatcc tgag 24

<210> 7  
<211> 28  
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<400> 7  
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28

<210> 8  
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<400> 8  
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<210> 10  
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ctcgagtcaa gagattgctt cttcaaa

27

<210> 11  
<211> 27  
<212> DNA  
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<220>  
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<400> 11  
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<210> 12  
 <211> 24  
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<220>  
 <223> PCR primer

<400> 12  
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<210> 13  
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 <212> DNA  
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<220>  
 <223> PCR primer

<400> 13  
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<210> 14  
 <211> 347  
 <212> PRT  
 <213> Arabidopsis thaliana

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His Thr Ile Glu Val Glu Pro Gln Tyr Ser Gly Ala Arg Ile Glu Gly  
 20 25 30

Glu Glu Val Thr Leu Asp Phe Val Lys Thr Met Met Glu Asp Phe Lys  
 35 40 45

Asn Gln Lys Thr Leu His Lys Arg Tyr Ala Tyr Gln Ile Val Leu Gln  
 50 55 60

Thr Arg Gln Ile Leu Leu Ala Leu Pro Ser Leu Val Asp Ile Ser Val  
 65 70 75 80

Pro His Gly Lys His Ile Thr Val Cys Gly Asp Val His Gly Gln Phe

27

24

85

90

95

Tyr Asp Leu Leu Asn Ile Phe Glu Leu Asn Gly Leu Pro Ser Glu Glu  
 100 105 110  
 Asn Pro Tyr Leu Phe Asn Gly Asp Phe Val Asp Arg Gly Ser Phe Ser  
 115 120 125  
 Val Glu Ile Ile Leu Thr Leu Phe Ala Phe Lys Cys Met Cys Pro Ser  
 130 135 140  
 Ser Ile Tyr Leu Ala Arg Gly Asn His Glu Ser Lys Ser Met Asn Lys  
 145 150 155 160  
 Ile Tyr Gly Phe Glu Gly Glu Val Arg Ser Lys Leu Ser Glu Lys Phe  
 165 170 175  
 Val Asp Leu Phe Ala Glu Val Phe Cys Tyr Leu Pro Leu Ala His Val  
 180 185 190  
 Ile Asn Gly Lys Val Phe Val Val His Gly Gly Leu Phe Ser Val Asp  
 195 200 205  
 Gly Val Lys Leu Ser Asp Ile Arg Ala Ile Asp Arg Phe Cys Glu Pro  
 210 215 220  
 Pro Glu Glu Gly Leu Met Cys Glu Leu Leu Trp Ser Asp Pro Gln Pro  
 225 230 235 240  
 Leu Pro Gly Arg Gly Pro Ser Lys Arg Gly Val Gly Leu Ser Phe Gly  
 245 250 255  
 Gly Asp Val Thr Lys Arg Phe Leu Gln Asp Asn Asn Leu Asp Leu Leu  
 260 265 270  
 Val Arg Ser His Glu Val Lys Asp Glu Gly Tyr Glu Val Glu His Asp  
 275 280 285  
 Gly Lys Leu Ile Thr Val Phe Ser Ala Pro Asn Tyr Cys Asp Gln Met  
 290 295 300  
 Gly Asn Lys Gly Ala Phe Ile Arg Phe Glu Ala Pro Asp Met Lys Pro  
 305 310 315 320  
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 325 330 335  
 Ala Tyr Ala Asn Asn Phe Leu Arg Met Phe Asn  
 340 345

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 <213> Arabidopsis thaliana  
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acgatgatgg aggatttaa gaaccaaaaa acattgcata aacggtatgc ctatcaaatac 180  
gtcttacaga ctaggcaaat cttgcttagca ctgccttctc ttgttgatata aagtgttcca 240  
catggcaaac atatcaactgt ttgcggtgac gttcatggtc agttctacga tcttctcaat 300  
atctttgagc ttaatggcct cccttcggag gagaacccat acctatttaa tggcgacttt 360  
gtggacagag gtcattctc cgttgagatc atcctcaattt tggttgcttt caagtgcata 420  
tgcccatcat ccatatatct agccagagga aaccatgaaa gcaagagcat gaacaaaatt 480  
tatggtttg agggtaggt tcggtccaag ttgagtgaaa aattcgtgga tcttttgct 540  
gaagtttctt gttacctccc gttggctcat gttataaaatg ggaaggtttt cgtggatcat 600  
ggaggtcttt tcagtgttga cggcgtgaaa ctctcagaca tcagagccat tgacagattc 660  
tgtgagccac cagaggaagg actaatgtgt gaactattgt ggagtgatcc tcaacctctc 720  
cctggaagag gccaagcaa gcggaggagtt ggtctatcat ttggtgagaa tgtgacaaag 780  
aggttttgc aagataacaa ttttagatttgc ttggtccggc cacatgaagt aaaagatgaa 840  
ggttatgagg ttgaacatga cggtaaactc ataactgtct tctctgcgcc aaattactgt 900  
gatcagatgg gtaataaggg agccttcatt cgtttgaag ctcctgatata aagccaaac 960  
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<212>	PRT
<213>	Homo sapiens

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<222> (1)  
<223> PAPP5

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                  20                 25                 30

Tyr Trp Ala Asn Arg Ala Phe Ala His Thr Lys Leu Glu Glu Tyr Gly  
50 55 60

Ser Ala Ile Gln Asp Ala Ser Lys Ala Ile Glu Val Asp Ser Arg Tyr  
65 70 75 80

Ser Lys Gly Tyr Tyr Arg Arg Gly Ala Ala Tyr Leu Ala Met Gly Lys  
85 90 95

Glu Lys Asp Ala Leu Lys Asp Phe Gln Gln Val Lys Gly Leu Ser Pro  
100 105 110

Asn Asp Pro Asp Ala Thr Arg Lys Leu Lys Glu Cys Glu Lys Ala Val  
115 120 125

Met Lys Leu Lys Phe Glu Glu Ala Ile Ser Val Pro Val Ser Glu Arg  
130 135 140

Arg Ser Val Ala Glu Ser Ile Asp Phe His Thr Ile Glu Val Glu Pro  
145 150 155 160

Gln Tyr Ser Gly Ala Arg Ile Glu Gly Glu Glu Val Thr Leu Asp Phe  
165 170 175

Val Lys Thr Met Met Glu Asp Phe Lys Asn Gln Lys Thr Leu His Lys  
180 185 190

Arg Tyr Ala Tyr Gln Ile Val Leu Gln Thr Arg Gln Ile Leu Leu Ala  
195 200 205

Leu Pro Ser Leu Val Asp Ile Ser Val Pro His Gly Lys His Ile Thr  
210 215 220

Val Cys Gly Asp Val His Gly Gln Phe Tyr Asp Leu Leu Asn Ile Phe  
225 230 235 240

Glu Asp Asn Gly Leu Pro Ser Glu Glu Asn Pro Tyr Leu Phe Asn Gly  
245 250 255

Asp Phe Val Asp Arg Gly Ser Phe Ser Val Glu Ile Ile Leu Thr Leu  
260 265 270

Phe Ala Glu Lys Cys Met Cys Pro Ser Ser Ile Tyr Leu Ala Arg Gly  
275 280 285

Asn His Glu Ser Lys Ser Met Asn Lys Ile Tyr Gly Phe Glu Gly Glu  
290 295 300

Val Arg Ser Lys Leu Ser Glu Lys Phe Val Asp Leu Phe Ala Glu Val  
305 310 315 320

Phe Cys Tyr Leu Pro Leu Ala His Val Ile Asn Gly Lys Val Phe Val  
325 330 335

Val His Gly Gly Leu Phe Ser Val Asp Gly Val Lys Leu Ser Asp Ile  
340 345 350

Arg Ala Ile Asp Arg Phe Cys Glu Pro Phe Glu Glu Gly Leu Met Cys  
355 360 365

Glu Leu Leu Trp Ser Asp Pro Gln Pro Leu Pro Gly Arg Gly Pro Ser  
370 375 380

Lys Arg Gly Val Gly Leu Ser Phe Gly Gly Asp Val Thr Lys Arg Phe  
385 390 395 400

Leu Gln Asp Asn Asn Leu Asp Leu Leu Val Arg Ser His Glu Val Lys  
405 410 415

Asp Glu Gly Tyr Glu Val Glu His Asp Gly Lys Leu Ile Thr Val Phe  
420 425 430

Ser Ala Pro Asn Cys Asp Gln Met Gly Asn Lys Gly Ala Phe Ile Arg  
435 440 445

Phe Glu Ala Pro Asp Met Lys Pro Asn Ile Val Thr Phe Ser Ala Val  
450 455 460

Pro His Pro Met Ala Tyr Ala Asn Asn Phe Ile Arg Met Phe Asn  
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<212> PRT

<213> Homo sapiens

<220>

<221> PEPTIDE

<222> (1)

<223> PP5

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Phe Lys Ala Lys Asp Tyr Glu Asn Ala Ile Lys Phe Tyr Ser Gln Ala  
35 40 45

Ile Glu Leu Asn Pro Ser Asn Ala Ile Tyr Tyr Gly Asn Arg Ser Leu  
50 55 60

Ala Tyr Leu Arg Thr Glu Cys Tyr Gly Tyr Ala Leu Gly Asp Ala Thr  
65 70 75 80

Arg Ala Ile Glu Leu Asp Lys Lys Tyr Ile Lys Gly Tyr Tyr Arg Arg  
85 90 95

Ala Ala Ser Asn Met Ala Leu Gly Lys Phe Arg Ala Ala Leu Arg Asp

100

105

110

Tyr Glu Thr Val Val Lys Val Lys Pro